AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Claims 1-7 (Cancelled).

8. (Currently amended) A method for producing an optical fiber having low polarization mode dispersion, comprising the steps of

a) providing an optical fiber preform of glass material;

b) heating the glass material of an end portion of the optical fiber preform in a furnace;

c) drawing the heated glass material at a drawing speed V to form an optical fiber, each portion of the drawn glass material having a viscous zone when passing through the furnace, the viscous zone having a viscous zone length L; and

d) applying to the optical fiber a substantially sinusoidal spin, which is transmitted to the viscous zone;

characterized in that

the spin function frequency *v*, the viscous zone length L and the drawing speed V being such that both a torsion and at least a 50% detorsion are applied to the viscous zone of each portion of the drawn glass material, and a recovery of at least 50% occurs in the optical fiber.

9. (Previously presented) The method according to claim 8, wherein the spin function frequency v, the viscous zone length L and the drawing speed V are such that $1.2*L \leq V/v \leq 6.7*L$.

10. (Previously presented) The method according to claim 8, wherein the spin function frequency v, the viscous zone length L and the drawing speed V are such that both a torsion and at least a 60% detorsion are applied to the viscous zone of each portion of the drawn glass material.

11. (Previously presented) The method according to claim 10, wherein the spin function frequency v, the viscous zone length L and the drawing speed V are such that $1.7*L \leq V/v \leq 3.3*L$.

12. (Previously presented) The method according to claim 8, wherein the spin function frequency v, spin function amplitude θ_0 and the drawing speed V are such that the maximum applied torsion is at least of 4 turns/meter.

13. (Previously presented) The method according to claim 8, wherein the spin function frequency v, the spin function amplitude θ_0 and the drawing speed V are such that the maximum frozen-in torsion is no more than 4 turns/meter.

14. (Previously presented) The method according to claim 13, wherein the spin function amplitude θ_0 (in turns) is such that $(2V)/(v\pi) \leq \theta_0 \leq (2V)/[v\pi(1-R)]$, wherein

V is the drawing speed (in meters/second), *v* is the spin function frequency (in Hz), R is the ratio $(T_{appl}-T_{fr})/T_{appl}$, T_{appl} is the maximum actually applied torsion and T_{fr} is the maximum frozen-in torsion.